MARSHALL STAR

Marshall Space Flight Center — June 8, 2000

"We bring people to space — We bring space to people"

Flexiplace Program-Regular Option

Some employees may be eligible to work from home

Flexiplace — the abbreviated name for the Federal Flexible Workplace Program — provides civil servants the opportunity to work all or part of the workweek at home.

Employees interested in participating in the Marshall Flexiplace Program's long term work arrangement may apply for the Regular Option. Under this arrangement, employees must report to the office at least one day a week.

The policy and procedural requirements are provided in Marshall Policy Directive 3000.1 and Marshall Procedures and Guidelines 3000.1 respectively. Both can be accessed electronically through the Marshall Integrated Document Library under the Directives Master List.

Excluded from Regular Option participation are senior executive service, managerial, supervisory, team leader, trainee, personnel specialist, Equal Employment Opportunity specialist, security specialist, clerical, and temporary or term positions.

Application for the program requires completion of the following forms, accessible through Informed, and submission to the supervisor for approval:

- MSFC 4292: MSFC Flexiplace Application and Agreement

*See **Flexiplace** on page 3*

Air-breathing rocket engine has test milestone

by Deana Nunley

Engineers developing air-breathing rocket propulsion technology achieved an important milestone in May.

The Marshall Center and its industry partner, Rocketdyne of Canoga Park, Calif., last month completed one hour of testing on an air-breathing rocket – or rocket-based, combined cycle – engine at the General Applied Sciences Laboratory (GASL) in Ronkonkoma, N.Y. The 3,600 seconds of test time on the ground testing engine represent the most time accumulated on any rocket-based, combined-cycle engine.

NASA is developing technology for air-breathing rocket engines that could help make space transportation safe, reliable and affordable for ordinary people. Development of air-

*See **Test** on page 7*

"Safety is the Top Priority"
— Safety slogan submitted by
Jimmy Cobb, QS10

Photo by Danny Reeves, NASA/Marshall Space Flight Center

High school students arrived Monday to participate in the SHARP program.

NASA selects SHARP PLUS high school student apprentices for 2000

NASA and the Quality Education for Minorities (QEM) Network selected 200 high school students to participate in the Summer High School Apprenticeship Research Program (SHARP) PLUS.

This year's recipients, selected from over 800 applicants, represent 146 high schools in 34 states, the District of Columbia, Guam, Puerto Rico and the Virgin Islands.

From June 12 to Aug. 4, SHARP PLUS apprentices will reside on the campuses of 10 universities (20 per site)

*See **SHARP** on page 6*

Chandra observes cloud powered by black hole

The Marshall-managed Chandra X-ray Observatory has shown that a giant gas cloud is being blasted by X-rays from the vicinity of a giant black hole that lurks in its center. The observation is of special interest because it shows the disruptive effects that a massive black hole can have over thousands of light years.

The observation also demonstrates that the searchlight beam of X-rays from the black hole can be used to probe the environment around a black hole.

The galaxy NGC 4151 is located at a distance of 50 million light years in a direction just south of the Big Dipper. It is a prominent example of a class of galaxies that show unusual energetic activity in their nucleus.

This activity is now known to be due to the presence of a giant black hole in the nucleus with an estimated mass 10 million times that of the sun. As matter swirls toward the black hole, it releases a prodigious amount of energy, much of it in X-rays. Previous observations showed that X-rays also are coming from an enormous cloud 3000 light years across that surrounds the black hole.

The precise mirrors of Chandra allowed astronomers to make an X-ray image showing unprecedented detail of the massive cloud in the center of NGC 4151. The brightest regions in the cloud correspond to wisps that were previously observed in visible light by the Hubble Space Telescope. The shape of the cloud confirms that X-rays from the black hole are collimated into a narrow beam, and illuminate only certain quadrants of the galaxy.

By using the High Energy Transmission Grating (HETG), astronomers were able to resolve the X-ray spectrum from the nebula surrounding the black hole into emission from its constituent elements.

It was found that the gas cloud contains nitrogen, oxygen, neon, magnesium, aluminum, silicon and iron. However, energetic X-rays coming from the center of NGC 4151 have stripped the atoms of these elements of most of their electrons. This provides direct evidence that the cloud is powered by the giant black hole which resides there.

In addition, the Chandra HETG spectrum reveals that portions of the cloud are moving away from us at a velocity of 800,000 mph.

Chandra data were taken with the HETG in conjunction with the Advanced CCD Imaging Spectrometer (ACIS) on March 5-6, 2000. The Massachusetts Institute of Technology in Cambridge built HETG , and Pennsylvania State University in University Park and MIT built ACIS.

Chandra selected as Editor's Choice in 2000 Discover Magazine awards

The Chandra X-ray Observatory, NASA's newest and most powerful X-ray space telescope, has been selected as the winner of the Editor's Choice category of the 2000 Discover Magazine Awards for Technological Innovation.

The team of government, industry, university and research institutions that designed, built and deployed Chandra for the Marshall Center, will be formally recognized June 24 at an awards celebration at Epcot Center at the Walt Disney World Resort in Orlando, Fla. Harvey Tananbaum, director of the Smithsonian Astrophysical Observatory's Chandra X-ray Science Center in Cambridge, Mass., which conducts the Chandra science mission for NASA, will receive the award on behalf of the team.

"Chandra has opened a new window for astronomers into the universe of high-energy cosmic events such as pulsars, supernova remnants and black holes," said Tananbaum. "We're now able to create spectacularly detailed images of celestial phenomena whose mere existence we could only hypothesize before."

Among Chandra's most significant discoveries to date, Tananbaum lists the detection of a giant ring around the heart of the Crab Nebula, details of the shock wave created by an exploding star and resolution of the high energy X-ray "glow" in the universe into millions of specific light sources.

The Discover Awards for Technological Innovation, now in their 11th year, are designed to acknowledge the creativity of men, women, corporations and institutions who have reached superior levels of ingenuity. Each year, Discover Magazine's editorial staff reviews thousands of new products and ideas presented in the scientific literature or nominated by leading technology-based companies and research organizations. The editorial staff selects semi-finalists in each of eight technology categories, then submits the nominations to an independent panel of experts. The panel then selects the finalists and the winner in each area of technology.

The Editor's choice category is reserved for innovations so unique or promising that they go beyond the magazine's established innovation categories by providing a marked advance in their field. Chandra's powerful X-ray telescope can resolve distant images eight times sharper and detect X-ray sources 20 times fainter than any previous X-ray space telescope.

Chandra, along with the rest of the winners, will be listed in the July issue of Discover Magazine, scheduled for delivery to newsstands on June 19. The 2000 award winners will also be featured at the magazine's Web site: www.discover.com

Gamma ray 'watchdog' ends a stellar career

by Martin Burkey

One of astronomy's most prolific tools of the last decade officially ended its career last Sunday when the Compton Gamma Ray Observatory reentered the Earth's atmosphere.

For nearly nine years, Compton's Burst And Transient Source Experiment, or BATSE — designed and built by the Marshall Center — kept an unblinking watch on the universe to alert scientists to the invisible, mysterious gamma ray bursts that had puzzled them for decades.

By studying gamma rays from objects like black holes, pulsars, quasars, neutron stars and other exotic objects, scientists can discover clues to the birth, evolution and death of stars, galaxies and the universe.

"I think BATSE has done everything a scientific tool can do," said Dr. Gerald Fishman, principal investigator for the instrument at Marshall. "It has answered some of the most perplexing questions in astronomy. It's answered some questions we didn't know we should ask, and it has provided us with a new set of questions for the future."

The gamma ray experiment was one of four major science instruments aboard Compton. It consisted of eight detectors, or modules, located at each corner of the rectangular satellite to simultaneously scan the entire universe for bursts of gamma rays ranging in duration from fractions of a second to minutes. When such bursts were detected, it alerted Compton's three other instruments, which could point toward the burst for a more detailed look.

With an impressive list of discoveries and diverse accomplishments, BATSE could claim to have rewritten enough astronomy textbooks in its 10-year life to make a famous author jealous.

Because gamma rays are so powerful, they pass through conventional telescope mirrors. Instead of a mirror, the heart of each BATSE module was a large, flat, transparent crystal that generated a tiny flash of light when struck by a gamma ray.

*See **Gamma ray** on page 7*

★ ★ ★
Marshall Stars
★ ★ ★

Sandra Turner, Marshall's protocol officer, has earned certification as a corporate etiquette and international protocol consultant.

The Protocol School of Washington in Washington, D.C., awarded her the certification after completion of training seminars on etiquette and international protocol.

Sandra Turner

As the Marshall Center's protocol officer since 1992, Turner plans and implements visits by royalty, heads of state, ambassadors, celebrities and other officials. She also is the primary contact between Marshall and the NASA Astronaut Corps at Johnson Space Center in Houston, arranging visits by Space Shuttle crew members; and she arranges Marshall's special guests operations during Shuttle launches at the Kennedy Space Center, Fla.

Previously, Turner served as executive assistant to the director of Marshall, and in several secretarial positions at the Center.

She is the recipient of numerous NASA awards, including the Exceptional Achievement Medal, Space Flight Awareness Honoree and the Silver Snoopy Award, the last of which is presented by astronauts to NASA employees for their contributions to the success of the Space Shuttle, payload or International Space Station programs.

Turner, a Huntsville native, studied interior design at the University of Alabama in Tuscaloosa. She and her husband David reside in Athens, Ala. They have two sons, Kyle and Byrne.

Flexiplace

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• MSFC 4292-1: MSFC Flexiplace Safety Awareness Statement

All forms must then be submitted to the Flexiplace program coordinator located in Bldg. 4200, room 307.

Eligibility requirements for the Regular Option are:

• One year of Marshall experience with demonstrated ability to work independently

• "Meets Expectations" on most recent performance rating of record

• Agreement to adhere to the policy and procedural requirements of the program by signing the Flexiplace Application and Agreement and the Safety Awareness forms

• Alternate work location provided by employee

• Approval of immediate supervisor with concurrence of department manager and directorate/office director

• Attending an orientation session with the program coordinator prior to beginning initial participation.

For more information, call Marshall's Flexiplace Program Coordinator Carolyn Lundy, at 544-4049.

Marshall signs research agreement with East Tennessee State University

by Marianne Higgins

The Marshall Center has reached an agreement with East Tennessee State University in Johnson City to work jointly on research, education and the transfer of new technologies to U.S. industries.

The Memorandum of Understanding, signed June 1 during the Tennessee Valley 2000 Regional Economic Summit in Huntsville, established the framework for collaboration to enhance both Marshall and the university's missions in science and technology.

"By leveraging the complementary capabilities of both organizations, we can discover better solutions to challenges in design graphics, engineering, technology and education," said Marshall Center Director Art Stephenson. "Our working together has the potential to benefit the region and the nation."

Stephenson and Dr. James A. Hales, dean of the College of Applied Science and Technology at East Tennessee State University signed the agreement. Hales becomes the university's first Special Assistant to the President for Economic Development on Aug. 1, and will serve as a full-time liaison between the business and industry community in the region and East Tennessee State.

Marshall is NASA's premier organization for development of space transportation and propulsion systems, as well as NASA's leader in microgravity research. East Tennessee State University enrolls nearly 12,000 students and offers more than 100 degree programs.

The newly named Scott M. Niswonger Advanced Visualization Lab at East Tennessee State University is recognized worldwide in the field of computer animation and graphics and visualization, drawing students from all parts of the United States as well as Europe and Asia. With this computer animation track, students may specialize in broadcast/special effects, character animation, product design/marketing or visual simulation.

The university's program has become one of the anchors of the Johnson City Med-Tech corridor. Imaging, animation and simulation provide numerous opportunities for collaborative projects throughout the medical community, and the program is serving as a focal point for economic development.

The writer, employed by ASRI, supports the Media Relations Department.

Photo by Emmett Given, NASA/Marshall Space Flight Center

Dr. James Hales, seated left, dean of the College of Applied Sciences and Technology at East Tennessee State University, and Marshall Center Director Art Stephenson sign a Memorandum of Understanding. Standing from left are U.S. Rep. Zach Wamp of Tennessee, U.S. Sen. Bill Frist of Tennessee and U.S. Rep. Bud Cramer of Alabama.

New orbiter added to Space Camp training center

The U.S. Space Camp Training Center has a new addition with initial construction on Intrepid, a Space Shuttle orbiter targeted for use with the Corporate Space Academy program.

The full-scale mock-up of the flight deck and mid-deck section of an orbiter was built by Guard Lee, a model builder with headquarters in Apopka, Fla. It arrived in Huntsville on flatbed trucks. Guard Lee and Space Camp technicians pieced it together.

Intrepid becomes the sixth Space Camp orbiter in the training center. It is named in honor of a long line of ships, including a Navy aircraft carrier credited with the recovery of some of the early astronauts following ocean splashdowns. The name also was chosen for the Apollo 12 lunar excursion module that transported astronauts Pete Conrad and Alan Bean to the surface of the Moon.

The Intrepid mission will be designed to accommodate teams of up to 16 people and will be capable of running one, two and six-hour simulated Space Shuttle missions.

Intrepid will be coupled with a new mission control, an extravehicular activity (EVA) area and a Space Station mock-up, all targeted to be operational in October at a projected cost of about $230,000. The Alabama Space Science Exhibit Commission, the governing body of the U.S. Space & Rocket Center, approved money for the project as a capital expenditure.

The corporate program caters to businesses and organizations seeking motivational or incentive programs for employees. A typical program combines training like an astronaut with classroom sessions designed specifically for the client's goals.

Tuition for a one-day incentive camp costs an average of $495 per person. Two and three-day camps can cost more than $1,000 per person depending on the customers needs.

Tennessee Valley Economic Summit a success

The Tennessee Valley Economic Summit, held June 1-2 at the Von Braun Center in Huntsville, brought together government, industry and political leaders to discuss the quality of life and the human, business, natural and scientific resources needed for future high-tech research, development and investment in the Tennessee Valley. The summit was the sixth in a series of annual economic summits first launched by U.S. Rep. Zack Wamp of Tennessee in 1995.

Photos by Emmett Given, NASA/Marshall Space Flight Center

U.S. Rep. Bud Cramer of Alabama, left, NASA Administrator Dan Goldin, center, and U.S. Sen. Bill Frist of Tennessee visit during the Valley Corridor Summit at the Von Braun Center.

Dr. Frank Franz, left, president of the University of Alabama in Huntsville, and Center Director Art Stephenson speak about space transportation.

Tennessee Valley historian Wilma Dykeman, left, and Alabama Gov. Don Siegelman address the conference.

Musical praising Huntsville, von Braun team debuts July 20

For the first time, "Rocket City, USA," comes alive in story, song and dance with the world premiere of "MoonDreams," a new Broadway-style musical about Huntsville and the contributions of the Von Braun rocket team to the human journey into space.

This original musical literally sings the praise of North Alabama, NASA, and the Marshall Center as America explores the Moon and outer space.

"MoonDreams," written by Rhett Parrish in conjunction with the Von Braun Celebration of the Arts and Sciences, is produced by Independent Musical Productions under the direction of Vivienne Atkins and features towering video screens, actors, singers, dancers and members of the Huntsville Symphony Orchestra.

Performances are July 20-22 at 7:30 p.m., with a 2:30 p.m. matinee on July 22. Tickets are on sale now at the Von Braun Center box office, (256) 533-1953, and at all Ticketmaster locations, (800) 277-1700 / www.ticketmaster.com

Upcoming Events

15th annual Small Business Awards — The Chamber of Commerce of Huntsville/Madison County is hosting the 15th annual Small Business Awards at 6 p.m. June 29 at the Von Braun Center North Hall. Marshall employees may purchase tickets from Rosa M. Kilpatrick at 544-0042 until June 23 for $30. After June 23, the cost is $45 per person.

Project Management Consultation — Tony Spear, retired Jet Propulsion Laboratory project manager of the Mars Pathfinder mission and author of the recent "NASA FBC Task Final Report," will be available for consultation with Marshall project personnel June 12 and 13. This service is part of the Marshall Center director's initiative to provide opportunities for project management mentoring. One-hour appointments can be scheduled by calling Ann Pigg at 544-0570.

Amnesty Day — The Marshall Center will hold a hazardous chemical turn in day from 9 a.m.-2 p.m. June 15 at Bldg. 4619. Chemicals that can be turned in are those with expired shelf life, no longer needed or unclaimed. Items that cannot be turned in include damaged, corroded or leaking containers; radioactive materials; explosives; medical wastes or materials; and household or personal wastes.

Annual Retiree Dinner — Marshall's annual retiree dinner will be Aug. 17 at the Von Braun Center.

FAST students begin 10-week program at Marshall Center

Participants in the Future Assets, Student Talent (FAST) Program from the Huntsville, Madison and Decatur area will spend the next 10 weeks working with mentors at Marshall, learning about high tech and professional careers.

This "on-the-job" work experience is designed to challenge students with disabilities to help them prepare for college and professional careers in government.

FAST is a community partnership program designed to provide enriched educational opportunities for talented students with disabilities.

The goal of the program is to motivate students with disabilities to further their education and achieve high tech and professional careers.

Students are encouraged to pursue a math and science curricula at the college level.

Photo by Danny Reeves, NASA/Marshall Space Flight Center

Axel Roth, standing at right, director of Marshall's Flight Projects Directorate, speaks to the Future Assets Student Talent (FAST) program orientation June 2.

The Marshall Center, in conjunction with FAST Inc., selects students with disabilities to work at the Center 10 weeks each summer with mentors from Center organizations.

SHARP

Continued from page 1

that have joined in partnership with NASA and QEM to implement the program.

In addition to research, apprentices participate in a wide variety of enrichment activities organized by the host universities. These activities range from information sessions on math, science and engineering careers, to test-taking and computer skills workshops, to an overview of college admissions and financial aid procedures.

The SHARP PLUS Program is a major strategy for increasing, strengthening and diversifying the country's future pool of mathematics, science, engineering and technology majors and professionals.

For the past seven years, the NASA SHARP PLUS Program has provided almost 1,800 summer research apprenticeships to rising juniors and seniors interested in mathematics, science, engineering and technology. Although SHARP PLUS apprentices have excelled in mathematics and science high school courses, most have not had the opportunity to apply this knowledge in a research environment. The program goal is to link students to professional research scientists and engineers in university and industry settings.

"We involve the educational community in our endeavors to inspire America's students, create learning opportunities and enlighten inquisitive minds. SHARP PLUS clearly meets these criteria by representing an investment in our professional work force of the future," said Deborah Green Glasco, NASA's Education Division Program manager for the SHARP PLUS Program. "While interacting daily with professional researchers, students gain hands-on and real-world experience in mathematics, science, engineering and technology fields."

The Quality Education for Minorities Network facilitates the SHARP PLUS program for NASA's Education Division. The network is a nonprofit organization dedicated to improving the education of minorities and other underrepresented groups throughout the nation.

"SHARP PLUS sets high expectations for academic achievement and seeks to increase the participation and success rate of talented students from groups underrepresented in challenging mathematics and science courses at the pre-college level," said Shirley McBay, president of the QEM Network.

The list of high school students, their home states and the participating universities in available on the Internet at: ftp://ftp.hq.nasa.gov/pub/pao/pressrel/2000/00-084a.txt

More information is on the Web at: http://education.nasa.gov/sharp.plus/index.html

Gamma ray

Continued from page 3

The flashes were amplified, recorded and transmitted to the ground. The gamma ray burst position information was provided to Compton's other three instruments, which had limited fields of view, but could see the sky in more detail than BATSE.

The gamma ray experiment discovered nearly 30 new exotic astrophysical objects and other phenomena stretching from Earth's own atmosphere to the edge of the universe, Fishman said.

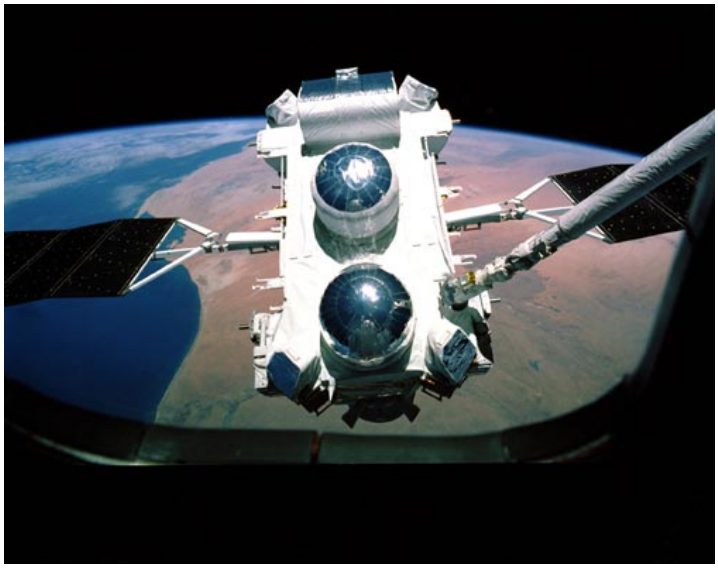
Some 37 universities, observatories and NASA centers in 19 states and 11 more institutions in Europe and Russia participated in BATSE's science program. In 1996, it was one of the most-cited experiments in scientific papers, and gained attention from numerous general interest publications.

BATSE-related research was responsible for 10 scientific prizes by leading astronomers, as well as 18 new Ph.Ds. And it helped pioneer astronomy's use of the Internet — becoming a tool for a broader realm of astronomy than the original Compton observatory team.

In January 1999, the instrument — via the Internet — cued a computer-controlled telescope at Los Alamos National Laboratory in Los Alamos, N.M., within 20 seconds of registering a burst. Programmed to respond in the absence of human control, the telescope re-pointed itself to observe BATSE's latest burst.

With that capability, the gamma ray experiment came to serve as a gamma ray burst alert for the Hubble Space Telescope, the Chandra X-ray Observatory and major ground-based observatories around the world.

Although its science instruments were functioning normally, NASA decided March 23 to return Compton to Earth's atmosphere for safety reasons after one of three on-board gyroscopes used to steer the orbiting observatory malfunctioned.



NASA Photo

Compton Gamma Ray Observatory

The propulsion system on Compton lacked sufficient fuel to boost the spacecraft to a higher, longer-lived orbit. Left alone, Compton eventually would have fallen from orbit, slowed by Earth's atmosphere.

Unlike most other satellites, Compton was too large to burn up entirely in the atmosphere during reentry and could have exposed populated areas to the risk of falling debris. The observatory was safely steered using the two functioning gyroscopes to reenter over an unpopulated area of the Pacific Ocean last Sunday. Its science instruments were turned off earlier in the week.

Compton exceeded its planned five-year mission by four years.

Compton was the largest satellite dedicated to peering into deep space in the highest energy part of the spectrum — gamma rays — which reveal the violent processes that occur in the universe.

NASA and international space agencies plan several upcoming missions to continue where Compton left off. Marshall is responsible for the Gamma-Ray Burst Monitor, the main instrument for detecting bursts on Compton's successor, the Gamma Ray Large Area Space Telescope, or GLAST. The telescope is planned for launch in 2005 to study gamma ray sources at even higher energies.

"The legacy of BATSE and its science team will continue because the sky is constantly changing," Fishman said. "Where one part of the sky today is dark, empty space, tomorrow it may be the scene of a cataclysmic eruption.

"With what we learned from BATSE and its successors," added Fishman, "we will continue to seek answers about the formation of stars and galaxies, the age of the cosmos, how far the universe extends, and, the still-elusive mechanism that causes these mysterious gamma ray bursts."

The writer, employed by ASRI, supports the Media Relations Department.

Job Opportunities

MSFC-ES-04-00, SES, Chief Engineer Flight Projects, Flight Projects Directorate. Closes July 3.

CPP 00-78-CP, Logistics and Resources Control Specialist, GS-301-13, Center Operations Directorate, Logistics Services Department. Closes June 16.

CPP 00-75-CL, AST, Advanced Propulsion Technologies, GS-861-14, Space Transportation Directorate, Propulsion Research Center. Closes June 20.

CPP 00-76-CL, AST, Advanced Propulsion Technologies, GS-861-14, Space Transportation Directorate, Propulsion Research Center, Closes June 20.

CPP 00-82-RE, AST, Aerospace Flight Systems, GS-861-14, Space Transportation Directorate, Advanced Concepts Department. Closes June 20.

MSFC-ED-00-108, AST, Flight Systems Design, GS-861-13. Closes June 13.

MSFC-QS-00-111, AST, Reliability and Quality Assurance, GS-861-13. Closes June 13

MSFC-QS-00-112, AST, Reliability and Quality Assurance, GS-861-13. June 13

Employee Ads

Miscellaneous

★ Craftsman lawnmower, self-propelled mulcher, rear bagger, 5.5HP, $100. 883-6284
★ Schwinn bicycle, tandem, early 70's model, new seats, tires, paint, handle bars, rebuilt two-speed rear hub, $300 obo. 828-2320
★ Fescue and clover square bales of hay, $1.50 out of field, $2 out of barn. 931-469-7324 after 6:30 p.m.
★ Chain-link fence, 180 feet, top rails, single gate, $140 obo. 650-5375
★ Lowe aluminum BassPro, 16', 50HP Mercury motor, $3,500. 772-9431
★ Hummel collectibles, from $100-$170; Dooney & Bourke purse w/matching wallet; generator, ultra-lightweight, 1,000W. 881-7000
★ Series 10 "lawsuit" copy of John Lennon Rickenbacker guitar, black and chrome, $400. 306-0700
★ Portable electronic typewriter system, LCD display, Canon Star-writer 300, $150. 539-7855
★ Toddler's multi-colored bike, training wheels attached, inflatable tires, $35. 464-5394
★ Car top bike carrier, four bikes maximum, $25. 882-3777

Vehicles

★ 1986 Toyota Camry, approx. 190K miles, a/c, 5-speed, $3,300 obo. 830-1445
★ 1997 Mitsubishi Eclipse GS, alloy wheels, leather, moon-roof, 6-CD changer, 55K miles, $12,800. 990-2050
★ 1982 Datsun 210 hatchback, approx. 190K miles, $800 obo. 830-1445
★ 1985 Corvette, red, 54K miles, removable top, $10,500; utility trailer, 10' bed, $300. 851-8292
★ 1990 Mazda 929S deluxe, champagne, leather, sun-roof, CD/cassette, high performance engine, $3,495. 837-6041
★ 1998 Ford Ranger XLT, 2WD, sport-side, 4-cylinder, 5-speed, CD, a/c, 23K miles, dark green, $11,600. 533-4504
★ 1970 VW bus, 1-owner, 86K miles, needs work, make offer. 464-0103

Wanted

★ Ride to work, 7 a.m.-3:30 p.m. shift, Governors Drive/Huntsville Hospital area, will pay $6 per day. 534-5398
★ NASA pictures, posters, pins, etc. 337-8545

Free

★ Oak firewood, cut and stacked, you pick up. 232-7495
★ To good home, Blue Heeler dog, male, less than one-yr. old, black/gray speckled w/black patch around eye, tail cropped. 498-5520/Chris
★ Kittens, born 4/13. 885-2105/Steve

Center Announcements

☛ ***'Take Our Children to Work Day'*** **—** Marshall will celebrate "Take Our Children to Work Day" June 22. Parents may bring their children in grades 3-12 to their respective work sites, and participate in a pizza lunch from 11:30 a.m.-1 p.m. at the Bldg. 4752 picnic area. Register your child on "Inside Marshall." Deadline is June 16. Registration will ensure a badge will be ready for pickup at the Bldg. 4200 lobby security desk and lunch for you and your child. For more information, call Billie Swinford at 544-0087.

☛ ***Computer Networking*** **—** Florida Institute of Technology is offering a certificate in Computer Networking. This program consists of 152 hours of study and is comprised of seven separate courses. The first course, Networking Fundamentals, will be Aug. 1-22. Each course meets from 5-9 p.m. on Tuesdays in Bldg. 5304 on Redstone Arsenal. Cost is $5,654; government rate is $4,306. For more information, call 876-1581.

☛ ***Recycle Used Tires*** **—** Madison County residents can recycle used passenger car and light truck tires by taking them to Madison County Commission District offices 1.3.3-East and 4 from 7 a.m.-3:30 p.m. June 12-16. Tires must be removed from rims, and no tractor tires will be accepted. No commercial vendors permitted. For more information, call 532-3505.

☛ ***Sign Language Classes*** **—** Two classes in American Sign Language for Marshall civil servants will be taught beginning June 19. Classes are Mondays and Thursdays for 18 days. The first class is from 8-10 a.m.; the second class, from 10 a.m.-noon. Both classes have a maximum capacity of 20 students, first come first served. Alabama Institute for Deaf and Blind (AIDB) will teach the classes. Enrollment will be via AdminSTAR. For more information, call Pat Schultz at 544-7559.

☛ ***Project Management Classes*** **—** Project Implementation will be from 8:30 a.m.-4 p.m. July 10-14 at Marshall. This course emphasizes the Implementation Sub-Process of NASA's Provided Aerospace Products and Capabilities (PAPAC) Cross-Cutting process. It focuses on executing a well planned, baselined project using the Program and Management Systems Requirements described in NPG 7120.5A. NPG 7120.5A Implementation will be from 8:30 a.m.-4 p.m. June 22 and Aug. 22, in Bldg. 4200, room G-21. This course familiarizes program and project personnel with the NASA Program/Project Management Process and how they fit into that process. For more information, call Renee Higgins at 544-8864.

☛ ***Mail Handlers*** **—** The Mail Handlers health representative will be at the Center from 10 a.m.-noon June 20 in Bldg. 4200, room 341, to assist employees with claims and questions.

☛ ***Blue Cross/Blue Shield*** **—** The Blue Cross/Blue Shield representative will be at the Center from 9-11 a.m. June 22 in Bldg. 4200, room 329, to assist employees with questions and claims.

☛ ***Shuttle Buddies*** **—** The Shuttle Buddies will meet for breakfast at 9 a.m. June 26 at Mullins Restaurant on Andrew Jackson Way. For more information, call Deemer Self at 881-7757 or Gail Wynn at 852-8189.

☛ ***NARFE Meets*** **—** The National Association of Retired Federal Employees (NARFE) will meet at 9:30 a.m. Saturday at the Senior Center on Drake Avenue. John Coyle will discuss long-term health care. For more information, call 837-0382 or 881-3168.

☛ ***MARS Ballroom Dance Club*** **—** Waltz and tango lessons will be from 7-8 p.m. June 12, 19 and 26 in the Parish Hall of St. Stephen's Episcopal Church at 8020 Whitesburg Drive. Beginner and intermediate classes will be taught at the same time. Cost is $6 per person per night. For more information, call Woody Bombara at 650-0200.

☛ ***AGA Meets*** **—** The North Alabama Chapter of the Association of Government Accountants will hold its annual Awards Meeting at 11 a.m. June 15 at Landry's Resturant. There will be no speaker. For reservations, call Sandy Seymour at 544-0099.

Sports

☛ ***MARS Tennis Tournament*** **—** The MARS Tennis Club will hold an Open Doubles Tournament at 8:30 a.m. Saturday at the Marshall tennis courts. MTC members can invite a guest to be their partner for a $3 fee. To participate, call Amy Hemken at 544-7097.

☛ ***MARS Golf*** **—** A two-person best score tournament will be 8:04 a.m. June 24 at Goose Pond. Deadline to register is June 16. For more information or to enter a tournament, call Lee Foster at 544-1589 or Joey Butler at 544-3808.

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